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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,830	10/30/2003	Yasutaka Nishida	HIRA.0128	7192
38327	7590	07/27/2005	EXAMINER	
REED SMITH LLP 3110 FAIRVIEW PARK DRIVE, SUITE 1400 FALLS CHURCH, VA 22042				MERCEDES, DISMERY E
ART UNIT		PAPER NUMBER		
				2651

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,830	NISHIDA ET AL.	
	Examiner	Art Unit	
	Dismery E. Mercedes	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 April 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) 3,9 and 11 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,4-8 and 10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 October 2003 and 29 April 2005 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1,7 & 10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2,4-5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, hereinafter, AAPA (pages 1-3 of instant specification & Figures 13-17) in view of Nishida et al. (US 6,657,813 B2), further in view of Kuroda (US 6,522,610 B2).

AAPA discloses a magnetic recording apparatus comprising: a magnetic recording medium having a soft magnetic underlayer and a magnetic recording layer (pages 1-2 of the instant specification); a magnetic head including a recording head (as depicted in Figures 13A-13B & lines 1-5 of page 2 of instant specification), a signal processing circuit for converting user data into a recording data sequence on a sector block by sector block basis (on page 2, second paragraph, & FIG.14 of instant specification).

AAPA fails to specifically disclose a current driver for converting the recording data sequence into a recording current that is applied to the recording head. However, Nishida et al.

discloses a magnetic head where a write current is applied to a coil wound around the main pole of the recording head, on (col.5, lines 36-45 & Figures 5-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement Nishida's magnetic head in AAPA's apparatus, the motivation being because Nishida teaches that a write current induces the write field of the recording head (line 43 of Nishida et al.).

AAPA fails to particularly disclose the signal processing circuit adds at the end of the recording data sequence for each sector block a repetition pattern of a minimum bit length for the particular block. However, Kuroda discloses such (col.4, lines 13-31). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention to modify AAPA's apparatus by adding a repetition pattern (ECC code) at the end of the data block as disclosed by Kuroda the motivation being because it would provide AAPA's apparatus with the enhanced capability of detecting errors in the data (col.4, line 14 of Kuroda).

As to Claim 2, the combination further discloses a repetition pattern of the minimum bit length (as disclosed by Kuroda (col.4, lines 13-31) after a postamble portion that follows an ECC portion (AAPA, FIG.14).

As to Claim 4, Kuroda further discloses a length of the minimum bit length added is one byte or more (col.4, lines 25-26 of Kuroda).

As to Claim 5, in the obvious combination, Nishida et al. further discloses a recording head is a single pole type head having a main pole and an auxiliary pole (as depicted in Figures 4-6 of Nishida et al.).

Method claim 10 are drawn to the method of using the corresponding apparatus claimed in claims 1, is therefore rejected for the same reasons as set forth in the rejection of claim 1, supra.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, hereinafter, AAPA (pages 1-3 of instant specification & Figures 13-17) in view Nishida et al. (hereinafter, Nishida, US 6,657,813 B2), further in view Kuroda (6,522,610 B2), further in view of Kuroda et al. (6,775,099 B2).

The combination of AAPA, Kuroda, and Nishida et al. discloses the apparatus as claimed in claim 1, but fails to particularly discloses a track pitch of 250 nm or less. However, Kuroda et al. discloses such (col.5, line 27-28 & FIG.9).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to use a track pitch of 250nms or less to in the apparatus disclosed in the obvious combination of AAPA, Kuroda. and Nishida, the motivation being because it would provide the apparatus with the enhanced capability of decreasing the influence of leakage magnetic flux, thus increasing the field gradient and decreasing the magnetization transition (col.5, line 30-35, col.6, lines 40-43 of Kuroda et al.).

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, hereinafter, AAPA (pages 1-3 of instant specification & Figures 13-17), in view of Kuroda (US 6,522,610 B2).

As to Claim 7, AAPA discloses a magnetic recording apparatus comprising: a magnetic recording medium having a soft magnetic underlayer and a magnetic recording layer (pages 1-2 of the instant specification); a magnetic head including a recording head (as depicted in Figures 13A-13B & lines 1-5 of page 2 of instant specification), a signal processing circuit for converting user data into a recording data sequence on a sector block by sector block basis (on page 2, second paragraph, & FIG.14 of instant specification).

AAPA fails to particularly disclose the signal processing circuit adds at the end of the recording data sequence for each sector block a repetition pattern of a minimum bit length for the particular block. However, Kuroda discloses such (col.4, lines 13-31). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention to modify AAPA's apparatus by adding a repetition pattern (ECC code) at the end of the data block as disclosed by Kuroda the motivation being because it would provide AAPA's apparatus with the enhanced capability of detecting errors in the data (col.4, line 14 of Kuroda).

As to Claim 8, the combination further discloses a repetition pattern of the minimum bit length (as disclosed by Kuroda (col.4, lines 13-31) after a postamble portion that follows an ECC portion (AAPA, FIG.14).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dismery E Mercedes
Examiner
Art Unit 2651

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DM

